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P R E F A C E.

THE Society instituted for the Encouragement of ARTS, MANUFACTURES, and COMMERCE, have usually prefixed as a Frontispiece to each of their Volumes, the Portrait of some one of their distinguished Officers; but on the present occasion they have been induced to deviate from that rule, by paying their tribute of respect to the Memory of the late Dr. Wm. ROXBURGH, who was, for many years, the Superintendant of the Hon. East India Company's Botanic Garden at Calcutta, and an Honorary Member of this Society, whose volumes have been frequently enriched by his communications.

It would have occupied too much space in this Preface, to have given even a brief account of the great exertions which he made for the improvement of Natural History, and its application to the useful Arts, a more detailed view of them

will be found at page 156, of this vol. under the Class of Colonies and Trade.

The arrangements in the present Volume have been made in the usual order, commencing with the Class of AGRICULTURE.

The unremitting endeavours in that department, of John Christian Curwen, Esq. of Workington-Hall, a Vice-President of this Society, deserve the most unqualified praise; he has lately added to his extensive farms near Workington, above four hundred acres of land heretofore waste and uncultivated; the whole has been well inclosed, sown with red wheat and oats, and afterwards with clover. He has manured the land upon a new principle, with burnt earth-ashes and lime, a system likely to be attended with the most beneficial results; he has detailed the method by which this is effected, and has furnished valuable information upon the fattening of cattle, with a view to prepare them for the market in less time and with less expense than has been heretofore required. He has been honoured by the Society with a Gold Medal.

To Backe Thornhill, Esq. of Stanton, near Bakewell, a Gold Medal has been awarded, for planting one hundred and sixteen acres of land with Forest Trees; besides which, he has since proceeded in planting other barren parts of the late

common

common of Stanton, to an extent of 270 acres, which is now thriving wood land, well inclosed, and intersected with carriage roads. By this improvement, in addition to the usual advantages of ornament and profit, good shelter is procured to the adjoining land, which peculiarly wanted such protection.

A Gold Medal has also been given to Henry Coape, Esq. of Gloucester-place, Portman-square, for gaining from the river Crouch, in Essex, 110 acres of Land, by means of Embankments, which he has made sufficiently strong to secure the land from the highest tides, and is likely soon to be valuable and productive.

The Pruning Shears for cutting Wood, invented by Mr. James Ogden, of Duckinfield, have great merit, from the ingenuity of their construction and powerful effect; in using the common shears employed for such purposes, the pressure upon the wood being made forward, occasions it, if elastic, frequently to elude the cut, and requires the operation to be renewed; whereas, in using Mr. Ogden's implements, the wood to be cut is drawn within the blades, so as to render the effect certain. The Society have presented him with the sum of Ten Guineas,

When the inconvenience experienced in a Country Residence where a vicious Bull is in the neighbourhood, and the dreadful wounds and other fatal accidents occasioned by

such an animal are considered, much satisfaction must be derived from the invention of a simple and efficacious apparatus, by H. J. Nicholls, Esq. of Wood-House, for preventing such accidents, and hindering the Bull from lifting up gates or destroying fences. The principle upon which it is constructed, is by occasioning such acute pain to the nostrils of the animal in attempting to use his horns, that he is only relieved by desisting from his purpose, finding himself at ease except when such attempts are made. The Society have presented to Mr. Nicholls their Silver Medal.

The preservation of Vegetable Food for Men and Cattle during the winter months is of considerable importance. Mr. H. B. Way, of Bridport Harbour, has proved, by the judicious application of a small portion of sand to carrots in air-tight casks or close vessels, that putrifaction is prevented, and the carrots preserved perfectly sound all the winter months. A communication from Mr. Whitlow, upon the preservation of Potatoes for exportation, which will be found under the Class of Colonies and Trade, confirms this principle. The Silver Ceres Medal was presented to Mr. Way.

In order to prevent the loss arising to Farmers in bad seasons, from Grain or Pulse being housed wet, Mr. William Bowler has exerted his ingenuity in contriving a portable Stove to dry and preserve it, for which he has been rewarded with Five Guineas. This Stove seems more particularly

cularly applicable to the purpose of drying beans, peas, or pulse.

Under the Class of CHEMISTRY will be found, an account of a most valuable Mineralogical Map of England and Wales, a labour of many years, by Mr. William Smith, in which he has, with infinite care and accuracy, pointed out the situation of the different Strata of Coal, Lime, Iron, Stone, and other mineral products, and the cheapest means by which these useful articles may be brought to market. The Society have presented him with Fifty Guineas.

The distance of the Island of Ceylon, in the East Indies, now belonging to the British Government, had hitherto prevented many of its most valuable articles from being brought here; but the active mind of Thos. Hoblyn, Esq. engaging in this object, he suggested to Government, that the importation of Cocoa-nut Oil would form a valuable branch of commerce, and in consequence one hundred and fifty hogsheads have been imported, and found useful for burning in enamellers' lamps, in forming soaps for practical and medical uses, and for other purposes. The Silver Medal has been presented to him,

The simple and ingenious application of a Sponge for the purpose of depurating Whale Oil and purifying Water, as applied by Mr. John Baker, possesses much merit from

its cheapness and efficacy. He was rewarded with Five Guineas.

In the Class of POLITE ARTS will be found, particular descriptions of Mr. Peter Nicholson's very ingenious Centro-linead; Mr. C. Varley's Portable Easel; and Mr. Fulton's Protractor; besides a long list of numerous rewards, of which short accounts are given in page 22, at the end of the List of Premiums offered.

In the Class of MANUFACTURES, Ten Guineas were given to Mr. Edwin Jones, of Southampton, for an Apparatus he has invented for laying ships' ropes, or covering such of them as are much exposed to action with small cord, by which machinery one man can do the work of two in the common mode.

Few persons have an adequate or distinct idea of the quantities of Straw Hats made in England, and the great number of people employed in the different branches of their preparation, even the process of giving the final pressure or lustre to them, is of itself a considerable line of business. In order to execute this object in a more economical and better manner, and to prevent the diseases which have arisen from the pressure of the common iron upon the breast, the Society have presented Ten Guineas to Mr. Scorrar, for a Box Iron, moveable upon an universal joint.

In

In the Class of **MECHANICS**, the Committee have, as usual, been constantly engaged during the whole Session, and many important discoveries will be found detailed under this head.

To alleviate pain, and to rescue from the jaws of death those brave men whose blood is shed in their country's cause, to ease the pangs of the female sex in the hour of labour, and to alleviate the racking tortures arising from the stone in the bladder, are objects naturally demanding the attention of a Society formed for the public good, and whose liberality on such occasions is not confined to the natives of the British Empire. To the Chevalier Paul Assalini, of Munich, Physician and Surgeon to Prince Eugene, of Bavaria, the Society have this Session presented their **Gold Medal**, for a variety of very ingenious Surgical Instruments invented or improved by him, and which are likely to be of infinite service in many operations.

To John Hyslop, Esq. the **Silver Medal** has been given, for an improvement in the **Lanceet**, which possesses considerable advantages, particularly in opening deep abscesses, and preventing the dangers which arise from the exposure of such wounds to the air.

The curious Pump invented by Mr. William Franklin, is cheap, and simple in construction, it combines the powers of a **lifting and forcing pump** in a single barrel, and furnishes a
continued

continued stream of water. He was rewarded with the Silver Medal and Fifteen Guineas.

To Mr. Alexander Law, of Deal, a Midshipman in the Royal Navy, two rewards have been given this Session, one of Twenty Guineas, for a better and more expeditious method which he has invented and put in practice, of conveying intelligence to Ships at sea. The other, a Silver Medal, for an improvement to Gun-carriages, by which guns on ship-board may be retained in a safer and firmer position in stormy weather, and this is effected by a single person, instead of the numerous hands heretofore employed on such occasions.

Improvements in every matter relative to our Navy, are encouraged by the Society with peculiar satisfaction. When a ship strikes upon a sunk or hidden rock in the ocean, what inexpressible anxiety must arise to the whole crew, from the uncertainty of the mischief done even after she is afloat. To ascertain whether any, or what serious damage the ship may have received below water, is on such occasions most desirable. The Instrument invented for that purpose, by Mr. J. Buck, affords the opportunity of examining the precise state of the Ship's bottom many feet under water, and enables the Commander to judge whether it will be prudent to proceed on his voyage, or make to the nearest port for safety. The Silver Medal and Ten Guineas were presented to him.

To

To Mr. Richard Williams, of H. M. Dock-yard, Chat-ham, a Silver Medal has been awarded, for a safe and efficacious method of preventing the loss of Lives, and the very serious accidents which frequently arise to workmen in removing the Centres of Brick or Stone Arches. On this plan a Centre of many feet in length can be removed or lowered with ease, without any person being obliged to be within it.

The Rev. Mr. Ridge's papers and plans for preventing climbing boys being employed within chimnies, do infinite credit to his head and to his heart; the facts he has related of the good effects of forming receptacles for soot below the union of the flue of the fire-place with the chimney, are deserving of very serious attention. He has received the Thanks of the Society.

To Mr. John Rapson, the Silver Medal has been voted, for a very ingenious Drag or Stop for the Wheels of Carriages, so contrived, that without any assistance, the breech-band of the horse securely locks the wheels in going down hill, and the Drag frees itself on the carriage coming again on level or rising ground.

To alleviate the miseries of the Brute Creation is always a desirable object; to make Horses lie down upon the ground and retain them safe in that position, is necessary in many surgical cases. Mr. Bracy Clark has contrived an useful invention

invention for such purpose, and been honoured with the Silver Medal.

To Mr. John Barrow, two rewards have been given, namely, the Silver Medal and Ten Guineas, for a Double Door Spring, to open either way ; and the Silver Isis Medal, for a Single Door Spring, upon a very cheap and simple principle.

The very ingenious Weighing Machine, for domestic use, invented by Mr. James Braby, may, on a slight inspection, appear to resemble the Steel-yards and Balances before in use ; but on a minuter examination, will be found to possess great independent merit from its accuracy in weighing, the ease of its adjustment, from its occupying very little room when not in use, and not being liable to be out of order. He has been presented with the Silver Medal.

Under the Class of **COLONIES** and **TRADE**, it will be found that an improvement by Mr. Phillips London, in the preparation of Salt by Fusion, has been the means of furnishing Mackarel in an excellent state both for home consumption and exportation ; many thousands of this fish, which would have been destroyed by putrefaction, are thus rendered useful to every class of society. The particular process for curing Mackarel is detailed in page 204, of the 32d Volume of **Transactions**. The Salt prepared by Mr. London is also excellently

excellently adapted for the preservation of all other animal food. Mr. London has been presented with the Silver Medal set in Gold.

The active mind of the late Dr. Roxburgh has furnished the Society with many communications on the products of the Eastern World, and several of his discoveries are stated in the paper inserted in this Class; he has likewise added an interesting communication on the various articles which the Natives of the East may have recourse to for food, in cases of failure of their Rice Crops, which has frequently occasioned great mortality there by famine.

Captain Cotton has brought to the particular notice of the Society, a valuable substitute for Hemp, superior in strength to English or Russian Hemp. This plant is named the *Urtica-tenacissima*, and its fibre Calooee Hemp; it grows plentifully in its natural state in the Island of Sumatra, and is now cultivated in different parts of India, owing to the exertions of Captain Cotton and the late Dr. Roxburgh, and is likely to be an article of the greatest importance to the British Navy. The Silver Medal has been presented to Captain Cotton.

To Mr. Charles Whitlow, who has traversed the greatest part of the American Continent in search of the various natural products likely to be useful, and taken considerable pains

pains to ascertain how the several articles may be conveyed without injury from one part of the world to another, the Silver Medal has been given for experiments made by him, upon a large scale and on a secure plan, for exporting Potatoes perfectly good to the British West Indies ; thus furnishing encouragement to the farmer to grow them, procuring a valuable freight for our ships, and an excellent nutritive food to the inhabitants of the Islands.

The ENGRAVINGS in the present Volume will be found very numerous, and executed in a style highly creditable to the Society, and to the Artists employed, whose respective names are inscribed upon the Plates.

During the late recess, the SOCIETY'S ROOMS have been in a considerable degree improved. The interior arrangements present an unostentatious but elegant appearance. The alteration of the Sky-light in the Great-Room is an evident improvement, and throws a better light on the noble CARTOONS which adorn it.

Several Members, anxious to contribute to the convenience and elegance of the building, have made various Donations to the Society, and though it might, under other circumstances, appear invidious to particularize the gift of an individual,

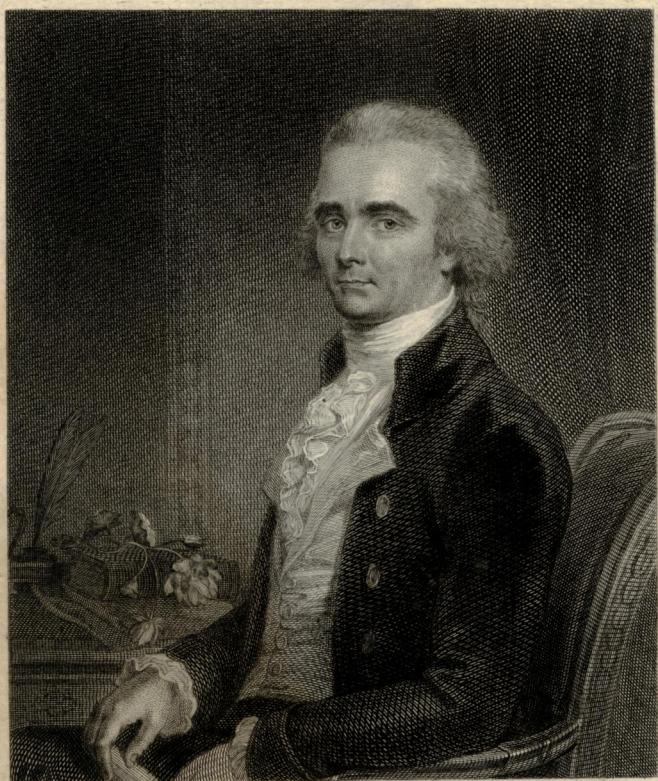
vidual, it is difficult to forbear noticing in an especial manner the Lamps which adorn the Great-Room, and which were presented by JOHN BLADES, Esq. A more appropriate mark of respect for the Society could not have been evinced, and the handsome manner in which so very valuable a present was given, are characteristic of the well-known generosity of this worthy Member. These Lamps were expressly designed and executed for the purpose by Mr. Francis Jones, and display much classical taste. Various Ornaments are introduced emblematical of the Society, and the whole are of fine wrought brass, surmounted with a Ducal Coronet, in compliment to His Grace the late President. A handsome and very useful Stove, in the Model-room, was presented by R. H. SALLY, Esq. The elegant Lamp in the Antichamber, and Knockers to the Door, were presented by Mr. BROOKES; the Lamp on the Staircase, by Mr. DE VILLE; and the valuable Plate-Glass to the Doors of the Great-Room, were contributed by Mr. HEDGES. These Presents display as well the taste as the liberality of the respective Donors, and are not less useful than ornamental to the whole building. It may justly be asserted, that there are no other Public Rooms in Europe open for similar purposes, where the advantages of the cultivation of the human mind are more strongly enforced, than by Mr. Barry's Allegorical Paintings in the Great-Room, nor more useful examples of general Mechanical improvement afforded, than by the Models in the Society's Repository.

The

The Society take the present opportunity of returning their Thanks to the different Public Bodies and individuals who have honoured them with Presents during the Session, the particulars of which are noticed near the close of the present Volume.

It is with great pleasure we add, that the Society has been for many years continuing to rise in public estimation, and that the accession of Members since the opening of the present Session, has far exceeded that of any former period.

The Society desire it to be clearly understood, that as a body they are not responsible for any opinion or representation of facts contained in the following pages.



William Roxburgh M.D. F.L.S
Superintendant of the Honble the East India Company's
Botanic Garden at Calcutta,
Late Honorary Corresponding Member of the Society
for the Encouragement of Arts Manufactures and Commerce.

Engraved by Charles Warren Esq^r from a Miniature
in the possession of Mr Roxburgh.